

Chihuahuan Desert Rangeland Research Center

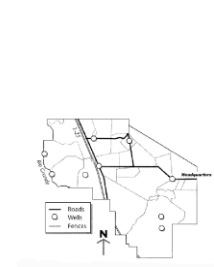
College of Agricultural, Consumer and Environmental Sciences New Mexico State University Strategic Plan 2020-2025

MISSION

New Mexico State University operates the Chihuahuan Desert Rangeland Research Center to protect and ensure the availability of its resources for teaching, research, and extension endeavors that benefit the citizens of New Mexico, as originally declared by Congress in 1927. The Chihuahuan Desert Rangeland Research Center (CDRRC) conducts educational, demonstrative, and experimental development with livestock, grazing methods, and range forage, including investigation of the sustainability and management of natural resources and environmental ecosystems.

BACKGROUND

The Center is located in Doña Ana County, New Mexico, at the southern end of the Jornada Plain. Now divided by Interstate 25, the Center encompasses almost 100 square miles, with one-fourth of the land west of the interstate.



Land on the Center varies widely, with elevations from 4,000 ft. on the Rio Grande flood plain on the west side to 5,840 ft. at the top of Summerford Mountain in the Doña Ana Mountains on the east side. The nearly level plains of the north and central parts of the Center are on the Jornada del Muerto basin, with several small playa areas where water collects after rainfall. Soils range from sandy loams to clays overlying caliche hardpan.

The CDRRC is an outdoor laboratory for rangeland management studies. By abutting the 78,297 hectares (302.31 sq. mile) USDA ARS Jornada Experimental Range, researchers can leverage many soils and range types for their studies. The two sites house field studies for the NSF Jornada Long-Term Ecological Research program (since 1982)—weather data has been collected since 1912.

ACTIVITIES

Teachers, researchers, and students from across campus benefit from the center. The NMSU Department of Animal and Ranges Sciences oversees the facility with help from a steering committee of scientists. The center is part of the Jornada Basin Long-Term Ecological Research project, which is part of a National Science Foundation Ecology Network. Current research efforts include:

- Evaluating continuous and seasonal grazing strategies at different intensities to determine effects on livestock performance as well as plant cover and composition.
- Evaluating the performance of breeds of cattle concerning the quality and quantity of forage in a hot, arid environment.

- Determining the influence of range conditions on wildlife populations.
- Autecology of plant species.
- Assessing competition and other interactions between common plant species.
- Ascertaining the role of small herbivores in a desert environment.

In addition to research conducted by the Department of Animal and Range Sciences, faculty and graduate students from other NMSU departments are conducting research at the Center. Currently, much of the research is in conjunction with the Jornada Basin Long-Term Ecological Research program, which is part of a nationwide program funded by the National Science Foundation. The CDRRC is used for teaching, demonstration, and research projects with livestock, grazing methods, and range forage, including investigations into the sustainability and management of natural resources and environmental ecosystems.

Due to its location and isolation, the CDRRC also is used by researchers from NMSU's Physical Science Laboratory (PSL), the U.S. Department of Defense, and private corporations for testing drones, telemetry, and radio interference.

HISTORY

In February 1926, the New Mexico College of Agriculture and Mechanic Arts (now New Mexico State University) acquired land, with grazing rights on adjoining public lands. In 1927, Congress granted public lands to the College for research purposes. The last parcel was acquired in 1984 through a "land swap" between the federal government and the State of New Mexico.

STRATEGIC PRIORITIES

Note: Goal and objective numbers correspond to the College of Agricultural, Consumer, and Environmental Sciences (ACES) strategic plan, but some objectives do not apply to these Centers and have been omitted.

GOAL 1: Enhance Student Success and Social Mobility

Student success is facilitated by the accommodation of individual, entire class, or community interest in participation at the CDRRC through the development of experiential learning, graduate and undergraduate research, and opportunities.

Objective 1.1 Maintain and enhance the existing structure that supports student success.

Actions:

- Communicate to faculty the opportunity to utilize CDRRC to strengthen educational programs.
- Enhance opportunities for faculty to utilize CDRRC to augment classroom activities.
- Develop a culture of inclusion of students desiring experiential learning experience to include them in current research/work activity.

Objective 1.2 Increase recruitment and retention of undergraduate and graduate students in programs of the College of ACES.

Actions:

- Communicate to faculty the opportunity for graduate students to participate with other CDRRC scientists to increase the experiential learning experience.
- Increase opportunities for research faculty to include a CDRRC component for graduate student research portfolio.
- Continue to accommodate all sustainable research project requests at CDRRC.
- Cooperate with all sustainable extramural funding proposals including the CDRRC component.

Key Performance Indicators (KPIs)

	Year 1	Year 3	Year 5
Undergraduate Interaction	10 students	20 students	40 students
Undergraduate participation	2 students	4 students	6 students
Graduate Interaction	8 students	10 students	14 students
Graduate Projects	6 projects	8 projects	10 projects
Coop Grant Submissions	5	7	10

Leading Indicators

- On-campus presentations and/or guest lectures in class or lab
- On-site field trip, presentation and/or guest lectures for visiting class or labs
- Student participation in research projects or livestock workdays
- Number of active research projects utilizing CDRRC resources
- Number of cooperative submissions of grant proposals, utilizing CDRRC resources, personnel

GOAL 2. ELEVATE RESEARCH & CREATIVITY

CDRRC recognizes that diversity of research and creative activity lends itself to creating a strong foundation for teaching, learning, education, training, innovation, and economic development.

Objective 2.1 Conduct research, teaching, and Extension programs on emerging issues.

Actions:

- Communicate with research faculty the resources available at CDRRC.
- Communicate with stakeholders through the advisory committee, stakeholder meetings, outreach, departmental contacts, etc., to gain insight into actual needs.
- Facilitate interaction of research faculty with stakeholders that encourage communication and discovery of stakeholder needs.

Key Performance Indicators

	Year 1	Year 3	Year 5
Faculty Solicitation/Communications (# of)	5	10	15

Stakeholder Interaction (# of events) 15 20 25

Leading Indicators

- Number of NMSU faculty who do not have a research presence at CDRRC contacted or non-NMSU research scientists who inquire to develop research at CDRRC
- Number of stakeholder events attended or hosted at CDRRC, especially with research faculty in attendance, as well

GOAL 3. AMPLIFY EXTENSION AND OUTREACH

CDRRC outreach extends knowledge of NMSU faculty/staff and industry beyond the university and industrial complex, by providing opportunities for faculty, staff, industry leaders, and stakeholders to engage one another and by facilitating a multi-dimensional educational process that allows all engaged to learn from each another by developing sustainable practices, research ideas and thought processes to build research programs that are responsive to stakeholders.

Objective 3.1 Develop innovative, multidisciplinary educational programming addressing issues relevant to New Mexico and expand the clientele base.

Action:

- Produce materials that can be delivered through mass media outlets—publications, news items, social media content, and different languages.

Objective 3.2 Connect current research with the community.

Actions:

- Develop, host, or participate in outreach programming that explains research findings to stakeholders and the general community.
- Participate in community functions and on boards to communicate and help solve problems or just lend a hand that utilizes special knowledge.
- Facilitate community/stakeholder events by participating in presentations.
- Provide service or product to stakeholders, therefore completing a positive engagement.
- Attend community events as an NMSU employee at the forefront.
- Strategic use of funds to support events through sponsorship or event participation.

Key Performance Indicators (KPIs)

	Year 1	Year 3	Year 5
Invited presentations	3	5	7
Attendance of Stakeholder Event/Meeting	5	7	10

Leading Indicators

- Number of invited presentations, including stakeholder meetings, K-12 classrooms, clinics, etc.
- Number of seed stock or premium livestock marketed for herd enhancement or livestock exhibition

- Number of stakeholder events, meetings, tradeshow attended by CDRRC personnel
- Number of community, stakeholder, state or national events or tradeshow attended by CDRRC personnel

GOAL 4. BUILD A ROBUST UNIVERSITY SYSTEM

CDRRC seeks to improve the university system through the maintenance and development of facilities that enhance research and outreach activities.

Objective 4.1: Recruit undergraduate and graduate students and faculty globally and increase the recruitment from underrepresented groups.

Actions:

- CDRRC will provide opportunities for faculty to develop novel innovative research that will provide preliminary data to support faculty seeking extramural funds.
- Provide a venue to bring NMSU faculty and staff to interact with New Mexicans and help support the mission of meeting the needs of New Mexico.

Objective 4.2: Expand a K–20 outreach program, inclusive of 4-H, focused on increasing participation and underrepresented groups to increase student awareness and participation in ACES programs and associated careers.

Action:

- CDRRC will communicate opportunities, cooperate with youth development coordinators, and provide an affordable venue for youth activities.

Objective 4.3: Encourage interdisciplinary and integrated management approaches in planning and implementing programs, emphasizing both applied and fundamental methods for developing comprehensive solutions to important issues.

Action:

- CDRRC will communicate the willingness to provide facilities and infrastructure to scientists for developing comprehensive solutions to important issues.

Objective 4.4: Elevate and promote the impacts and visibility of the AES and CDRRC.

Actions:

- Maintain and enhance existing infrastructure and capability that supports research.
- Develop information that can be used to communicate broad and high-quality activities at the CDRRC.
- Provide service or product to stakeholders therefore completing a positive engagement.
- Operations of the CDRRC will be based on best-management practices as established by the industry, but also by cutting edge research.

Objective 4.5: Continue a targeted involvement in multistate, regional, and international programs.

Action:

- CDRRC will continue to provide facility and infrastructure support for scientists and specialists for developing research ideas and educational programming.

Objective 4.7: Encourage and cultivate staff excellence, and support staff training, development, and recognition.

Actions:

- Provide faculty and staff with training opportunities that will empower them to identify and implement processes that enhance system efficiency.
- Recognize faculty and staff excellence in service and research support.
- Ensure that communication between CDRRC and campus faculty and staff is clear and effective so that research objectives are met and challenges are addressed early and sufficient solutions to issues can be established.

Goal 4 Key Performance Indicators (KPIs)

- Number of stakeholder-identified concerns addressed through research, Extension, or outreach activities
- Number of collaborative efforts across departments, colleges, and scientific organizations across the region and nation to address the critical problems affecting New Mexico's agriculture and rural areas
- Number of public communications and news stories regarding research, Extension, and outreach efforts taking place at ASCs
- Number of stakeholders who participate in cooperative ventures and coalition-building to increase resource support for the college
- Establishment of a system of incentives for excellence in research and external grantsmanship
- Number of ASC-related news stories, accomplishments, and areas of excellence presented to New Mexico legislators and New Mexico citizens
- Development of transdisciplinary initiatives for digital and prescriptive agriculture, New Mexico agriculture value chain enhancement, agriculture literacy initiative, and youth development via online learning
- Economic sustainability (grants, sales, services, etc.)
- Increased number of collaborative/new research projects fostered by communication with stakeholders
- Novel research support by the ASCs for preliminary data to gain grant access
- Number of personnel development programming opportunities afforded to staff

Key Performance Indicators

	Year 1	Year 3	Year 5
• Economic sustainability of CDRRC (financial reserves)	50%	80%	100%
• Hosted meetings between CDRRC and on-campus Faculty and Staff	1	2	3
• Support of novel innovative projects	1	2	3
• Personal development seminar attendance for staff	1	2	3

Leading Indicators

- CDRRC is fiscally self-sustaining with contingency monies.
- Increased collaborative research that has been fostered by open communication.
- Novel research projects supported have resulted in federally funded grant proposals
- CDRRC staff has attended personal development programs that have enhanced the mission of CDRRC.